

KLABUNOVSKIY, Ye.I.; VOLKOVA, L.M.; AGRONOMOV, A.Ye.

New method for obtaining stereospecific silica gels. Izv.AN  
SSSR.Otd.khim.nauk no.11:2101 N '61. (MIRA 14:11)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.  
(Silica)

ANDRIANOV, K.A.; VOLKOVA, L.M.

Reaction of aryl (alkyl)aminomethylethoxysilanes with alkyl (aryl)-  
hydroxysilanes. Izv.AN SSSR.Otd.khim.nauk no.11:2003-2006 N '61.  
(MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Silane)

TERENT'YEV, A.P.; GRACHEVA, R.A.; VOLKOVA, L.M.

Preparation of substituted acids via furan derivatives. Part 5:  
Synthesis of D, L-Proline. Zhur.ob.khim. 31 no.9:2826-2828 S '61.  
(MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.  
(Proline) (Furan)

34992

S/190/62/004/003/012/023

B110/B144

15.8170  
AUTHORS:

Andrianov, K. A., Volkova, Lora, M., Sokolova, N. V.

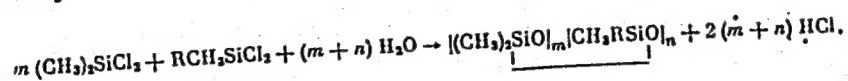
TITLE:

Synthesis and polymerization of  $\alpha$ - and  $\beta$ -cyano dimethyl cyclosiloxanes

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, v. 4, no. 3, 1962, 403-406

TEXT: The cchydrolysis of bifunctional polymers was conducted in an acid medium:



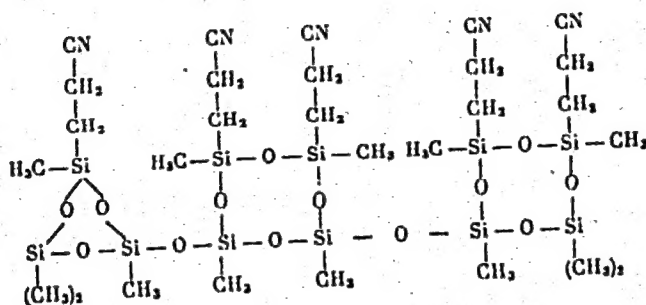
where R =  $\text{CHCNCH}_3$ ;  $\text{CH}_2\text{CH}_2\text{CN}$ . The cchydrolysis of dimethyl dichloro silane with  $\alpha$ -cyano-ethyl-methyl dichloro silane yielded heptamethyl- $\alpha$ -cyano-ethyl cyclotetrasiloxane (I), that of  $\beta$ -cyano-ethyl-methyl dichloro silane and dimethyl dichloro silane yielded heptamethyl- $\beta$ -cyano-ethyl cyclotetrasiloxane (II) and a complicated cyclic compound (III). Hydrolysis products are transparent liquids distillable without decomposition and well

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S/190/62/004/003/012/023  
B110/B144

Synthesis and polymerization of...

soluble in benzene, toluene, ether, and  $\text{CCl}_4$ . Their structure was determined by elementary analysis their molecular weight was determined and IR spectra were taken. Absorption bands at  $1079\text{--}1095\text{ cm}^{-1}$  showed vibrations of the Si-O bond in the 8-membered ring, bands at  $800$  and  $1250\text{ cm}^{-1}$  showed those of the Si-CH<sub>3</sub> bond, and bands at  $2332\text{ cm}^{-1}$  showed those of the C≡N bond. Peaks at  $1020\text{ cm}^{-1}$  and  $1060\text{ cm}^{-1}$  (Si-O bonds in the 6- and 8-membered rings) and further analytical results suggest the following structure of III:



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Synthesis and polymerization of...

5/190/62/004/003/012/023  
B110/B144

In polymerization with KCH, III behaves like bicyclic polydimethyl siloxanes owing to its easy polymerization at 20°C. At 120°C it forms a structurized product. Catalytic polymerization of II at 130°C was found to cause 2.02 % shrinkage. The polymerization rates form the sequence II > copolymer II + III > III. Higher polymerization rate of II is probably due to the positive polymerization of the Si atom bound to the β-cyanoethyl group, which easily coordinates with the OH group. There are 3 figures, 1 table, and 5 references: 1 Soviet and 4 non-Soviet. The most important reference to English-language publications reads as follows: G. Cooper, M. Prober, J. Organ. Chem., 25, 240, 1960.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M. V. Lomonosova (Moscow Institute of Fine Chemical  
Technology imeni M. V. Lomonosov)

SUBMITTED: March 1, 1961

Card 3/3

S.3700

33268  
S/062/62/000/001/007/015  
B117/B101

AUTHORS: Andrianov, K. A., and Volkova, L. M.

TITLE: Reactions of amines with bis-(chloro-methyl)-tetramethyl  
disiloxane and its derivatives

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh  
nauk, no. 1, 1962, 87 - 90

TEXT: The interactions of 1,1,1,2,3,4,4,4-octamethyl-2,3-di-(chloro-  
methyl)-tetrasiloxane with hexamethylene diamine, and bis-(chloro-methyl)-  
tetramethyl disiloxane with trimethyl-( $\beta$ -amino-ethoxy)-silane were  
studied. Both hydrogen atoms of the amino group were substituted. There-  
fore, to avoid cyclization, the reaction of trimethyl-( $\beta$ -amino-ethoxy)-  
silane and chloro-methyl pentamethyl disiloxane was studied. In this  
reaction (3 hrs at 110 - 120°C), one hydrogen atom only was substituted  
and 2,2,4,4,10,10-hexamethyl-6-aza-3,9-dioxa-2,4,10-trisila-undecane was  
separated. Treatment of the reaction products with aqueous alkali  
yielded 4,4-tetramethyl-6-aza-3-oxa-2,4-disiloxane-8-ol. The interaction

Card 1/1 2

33268

S/062/62/000/001/007/015  
B117/B101

Reactions of amines with...

of chloro-methyl-methyl diethoxy silane with hexamethylene diamine does not cause substitution of the two hydrogen atoms in the amino group. Cyclization was found to depend on the flexibility of the disiloxane group which eliminates steric hindrances for the substitution of the second hydrogen atom. Substitution of the second hydrogen atom during the interaction of monofunctional compounds is prevented by steric hindrances. There are 1 table and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: I. L. Speier, USA Patent 2567131; October 1, 1951; Chem. Abstrs. 46, no. 6, 2564d (1952).

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: July 29, 1961

Table 1. Properties of synthesized compounds. Legend: (1) Formula of  
Card 2/1 2



33979

S/062/62/GCO/002/004/013  
B117/B138

11.9200  
15.8170

AUTHORS: Andrianov, K. A., and Volkova, Lora M.

TITLE: Synthesis of dimethyl cyclosiloxanes with functional groups at the silicon atom

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1962, 264-269

TEXT: Cyclic dimethyl siloxane compounds with functional groups at the silicon atom were synthesized. Highly reactive groups such as chloro, alkoxy, phenoxy, and amino groups may serve as functional groups in the conversion of polymers into different materials. The exchange reaction between 1,5-sodium oxyhexamethyl trisiloxane and methyl trichloro silane in the presence of excess methyl trisiloxane showed that the reaction could be influenced to yield low-molecular cyclic compounds. Heptamethyl chlorocyclotetrasiloxane ( $C_7H_{21}O_4Si_4Cl$ , boiling point at 79-81°C (14 mm Hg); yield ~30 %), and other compounds not distillable in vacuum were obtained in this manner. The substitution of methoxy and phenoxy groups for

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33979

S/062/62/000/002/004/013  
B117/B138

# Synthesis of dimethyl cyclosiloxanes...

chlorine in heptamethyl chlorocyclotetrasiloxane is accompanied by secondary processes. In all cases polymeric substances, not distillable in vacuum, are formed besides heptamethyl methoxycyclotetrasiloxane (I) and heptamethyl phenoxy cyclotetrasiloxane (II). [Abstracter's note: Roman numerals refer to the table.] The substitution of amino and phenyl-amino groups for chlorine in heptamethyl chlorocyclotetrasiloxane has a smooth course and shows that cyclic compounds with different functional groups at the silicon atom can be obtained by this reaction. Heptamethyl amino cyclotetrasiloxane (V) (yield 60.4 %) and heptamethyl phenyl amino cyclotetrasiloxane (VI) (yield ~40 %) were synthesized in this manner. The joint hydrolysis of dimethyl dichloro silane with methyl butoxy dichloro silane and methyl ethoxy dichloro silane yielded, correspondingly, hexamethyl di-butoxy cyclotetrasiloxane (IV) and hexamethyl diethoxy cyclotetrasiloxane (III). All synthesized compounds are colorless, transparent liquids, well soluble in benzene, toluene, sulfuric ether, and acetone. Their structure was determined by both IR-spectra and ultimate analysis. Physical properties are indicated in the table. L. Tartakovskaya, a student at the Institute, who participated in the experimental work, is mentioned. There are 1 figure, 1 table, and

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33979

Synthesis of dimethyl cyclosiloxanes...

S/062/62/000/002/004/013  
B117/B138

3 Soviet references.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M. V. Lomonosova (Moscow Institute of Fine Chemical  
Technology imeni M. V. Lomonosov)

SUBMITTED: July 18, 1961

Table. Physical properties of synthesized compounds.

Legend: (1) cyclosiloxane; (2) formula; (3) boiling point, °C (p, mm Hg);  
(4) found; (5) calculated; (I) heptamethyl methoxy cyclotetrasiloxane;  
(II) heptamethyl phenoxy cyclotetrasiloxane; (III) hexamethyl diethoxy  
cyclotetrasiloxane; (IV) hexamethyl dibutoxy cylcotetrasiloxane; (V)  
heptamethyl amino cyclotetrasiloxane; (VI) heptamethyl phenyl amino  
cyclotetrasiloxane. +) Position of alkoxy groups not established.

Card 3/10 3

S/051/61/011/006/010/012  
E039/E385

AUTHOR: Volkova, L.M.

TITLE: The effective excitation cross-sections of certain spectroscopic lines of sodium

PERIODICAL: Optika i spektroskopiya, v. 11, no.6, 1961, 775-777

TEXT: The values of the excitation cross-sections for sodium lines obtained by the author are shown to be much lower than the values obtained by Haft (Ref. 6 - Zs.Phys., 82, 73, 1933). The reason for this difference is discussed and it is stated that, while Haft compared the intensities of the sodium lines with standard helium lines, he did not indicate the pressure of the helium in his standard source and that he may have made an incorrect choice of the standard helium lines. In order to check Haft's data, the present author measured the effective excitation cross-section of ten lines of sodium by the method of comparing the intensities of the sodium lines with the intensity of suitable parts of the continuous spectrum of a calibrated tungsten filament lamp and by comparison with standard helium lines. The results obtained are shown in the table. In the first Card 1/2

The effective excitation ....

S/051/61/011/006/010/012  
E039/E385

column the wavelengths of the sodium lines are given; in the second the sodium line transitions; in the third the wavelengths of the helium lines used for calculating the cross-section of the sodium lines; in the fourth the values of the effective cross-sections of the sodium lines obtained by the author and in the fifth the results of Haft. These results confirm the author's assumption that the values obtained by Haft were high because of his incorrect choice of the standard helium lines. V.Ye. Yakhontova and M.I. Kliot-Dashinskiy are mentioned in the article for their contributions in this field. ✓

There are 1 table and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc. The three English-language references mentioned are: Ref. 2: John Bronco - J. Opt. Soc. Amer., 50, 28, 1960; Ref. 3: A.V. Phelps, Phys. Rev., 110, 1362, 1958; Ref. 8: Smithsonian Physical Tables, 1954.

SUBMITTED: June 14, 1961

Card 2/72

29519  
S/062/61/000/011/006/012  
B103/B147

S 3700

AUTHORS: Andrianov, K. A. and Volkova, L. M.

TITLE: Reaction of aryl-(alkyl-)amino-methyl-ethoxy silanes with alkyl-(aryl-)hydroxy silanes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 11, 1961, 2003 - 2006

TEXT: The paper deals with the reaction of aryl-(alkyl-)amino-methyl-ethoxy silanes  $XCH_2CH_2Si(OC_2H_5)_2$  with (a) triethyl-hydroxy silane, (b) dimethyl-phenyl-hydroxy silane, and (c) diethyl-dihydroxy silane, X being  $C_6H_5NH-$ ,

$(C_2H_5)_2N-$ ,  $ClC_6H_4NH-$ ,  $O \begin{array}{c} CH_2CH_2 \\ \diagup \quad \diagdown \\ CH_2CH_2 \end{array} N-$ . It has been found that the introduction

of one amino group into the organic radical in alpha position to the Si atom increases the exchangeability of the alkoxy group for the triethyl- or dimethyl-phenyl-siloxy groups. The reaction takes place readily and without catalysts as follows:  $XCH_2CH_2Si(OC_2H_5)_2 + 2(C_2H_5)_3SiOH \rightarrow$

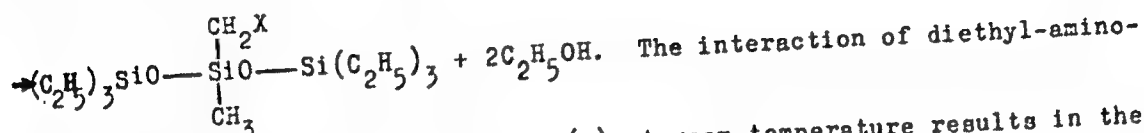
Card 1/4

29519

S/062/61/000/011/006/012

B103/B147

Reaction of aryl-(alkyl-)amino-...



The interaction of diethyl-amino-methyl-(methyl-)diethoxy silane and (a) at room temperature results in the heating of the mixture. If the reaction mixture is heated gradually up to 150°C, more than 70% of alcohol is distilled off. 1, 1, 1, 3, 3, 3-hexaethyl-2-methyl-2-diethyl-amino-methyl trisiloxane was separated by fractionation of the reaction products (yield 78.5%). Phenyl-amino-methyl-dimethyl-ethoxy silane reacts with b) equally well. Already within the first hour of heating more than 70% of alcohol was separated and 1, 1, 2, 2-tetramethyl-1-phenyl-amino-methyl-2-phenyl disiloxane was formed. In the above cases, one alkoxy group is substituted by the triethyl- or dimethyl-phenyl-silo groups just as readily as two. The reaction of c) with phenyl-amino-methyl-dimethyl-ethoxy silane is much more complicated. Two products were separated: 1, 1, 3, 3-tetramethyl-2,2-diethyl-1,3-di(phenyl-amino-methyl) trisiloxane and bis-(phenyl-amino-methyl)-tetramethyl disiloxane. The reaction does not only take place as follows:

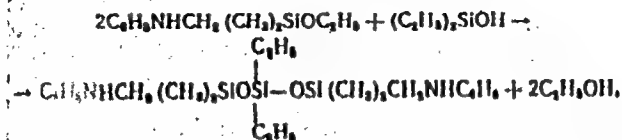
Card 2/64

29519

S/062/61/000/011/006/012

B103/B147

Reaction of aryl-(alkyl-)amino...



It is also accompanied by secondary processes. Condensation of c) has to be mentioned as one of these processes:  $(\text{C}_2\text{H}_5)_2\text{Si}(\text{OH})_2$

$\rightarrow \text{HOSi}(\text{C}_2\text{H}_5)_2-\text{O}-\text{Si}(\text{C}_2\text{H}_5)_2\text{OH} + \text{H}_2\text{O}$ . Phenyl-amino-methyl-dimethyl-ethoxy silane is hydrolyzed owing to the effect of the water formed and subsequently the product of hydrolysis is condensed to bis-(phenyl-amino-methyl)-tetramethyl disiloxane. The eight new substances produced in the above-mentioned reactions are listed in a table. Replacement of alkoxy groups by triethyl- and dimethyl-phenoxy groups is a reaction of nucleophilic substitution. The easy exchange of the ethoxy group for trialkyl siloxy groups in amino-methyl-ethoxy silanes is due to the inductive effect of the nitrogen in the methyl radical on the silicon. Owing to this effect Si becomes more positive and thus succumbs more readily to the nucleophilic attack of trialkyl-(aryl-)

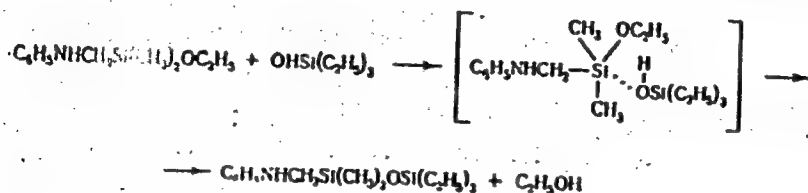
Card 3/6 4



Reaction of aryl-(alkyl-)amino...

29519  
S/062/61/000/011/006/012  
B103/B147

hydroxy silanes according to the following mechanism:



There are 1 table and 3 non-Soviet references. The reference to the English-language publication reads as follows: L. J. Tyler, US-Patent 2611774; 23. IX. 1952; Chem. Abstr. 47, 4129 (1953).

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR  
(Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

Card 4/0.4

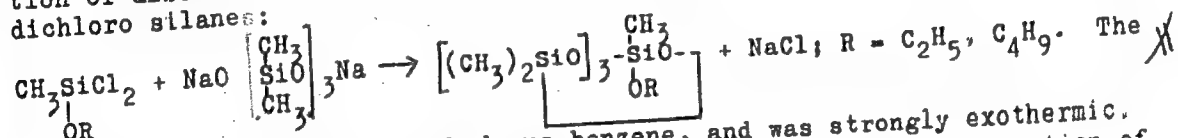
28188

S/190/61/003/010/012/013  
B124/B110

15.8170

AUTHORS: Andrianov, K. A., Volkova, Lora, M.  
TITLE: Synthesis and polymerization of heptamethyl alkoxy  
cyclotetrasiloxanes  
PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 10, 1961,  
1580-1583

TEXT: The authors studied synthesis and polymerization of organosiloxanes containing methyl alkoxy siloxane groups besides dimethyl siloxane groups. The heptamethyl alkoxy cyclosiloxanes were synthesized by double decomposition of disodium-1,5-dioxy-hexamethyl trisiloxane (I) and methyl alkoxy dichloro silanes:



reaction was conducted in anhydrous benzene, and was strongly exothermic. Heptamethyl ethoxy cyclotetrasiloxane (II) was obtained in the reaction of  
Card 1/6

28188

S/190/61/003/010/018/019  
B124/B110

Synthesis and polymerization ...

(I) with methyl ethoxy dichloro silane, and heptamethyl butoxy cyclotetra-  
siloxane (III) was obtained with methyl butoxy dichloro silane. The  
resulting alkoxy organocyclotetrasiloxanes are transparent liquids; their  
properties are given in Table 1. Their structure was determined on the  
basis of results of the ultimate analysis, the infrared spectra, and the  
quantitative reactions for alkoxy groups. The ring opening of the  
heptamethyl alkoxy cyclotetrasiloxanes in the presence of KOH as a  
catalyst was dilatometrically studied at 130°C; it was found that the com-  
position of the organosiloxane groups on the eight-membered ring strongly  
affected the course of polymerization. When determining the degree of  
polymerization from the change in volume of the polymer (Table 2), the  
authors found that polymerization was strongly delayed by introducing  
alkoxy (mainly butoxy) groups. III polymerizes slowly (Curve 1, Fig. 2)  
but with high yield (84.28%) to a polymer with a molecular weight of  
2140 whereas II polymerizes faster (Curve 2, Fig. 2) with a yield of 81.82%  
to a polymer with a molecular weight of 2200. The polymerization rate  
drops in the order: octamethyl cyclotetrasiloxane > II > III. An analysis  
of polyheptamethyl butoxy cyclotetrasiloxane shows that its composition  
corresponds to that of the chain link in the formula:

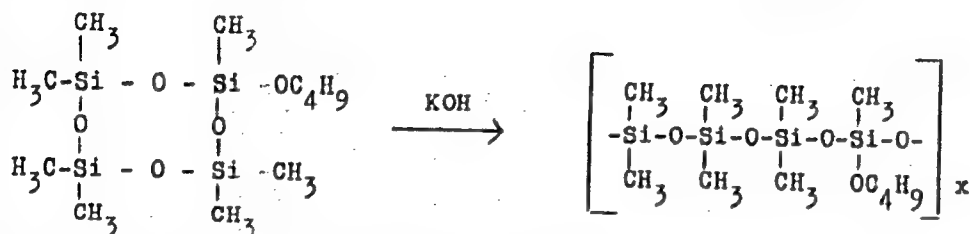
Card 2/6

Synthesis and polymerization ...

28188

S/190/61/003/010/018/019

B124/B110



In the experimental part, the authors describe the synthesis of II and III, and the polymerization of heptamethyl alkoxy cyclotetrasiloxanes generally, and that of III in detail. There are 2 figures, 2 tables, and 5 Soviet references.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: December 17, 1960

Card 3/6

VOLKOVA, L.M.; DEVYATOV, A.M.

Effective excitation cross sections of some spectral lines of  
argon. Opt. i spektr. 7 no. 6:819-820 D '59. (MIRA 14:2)  
(Argon—Spectra)

ANDRIANOV, K.A.; VOLKOVA, L.M.

Interaction of bis(chloromethyl)tetramethyldisiloxane with  
hexamethylenediamine. Vysokom. soed. 2 no.8:1261-1265 Ag '60.  
(MIRA 13:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Siloxanes) (Hexanediamine)

TERENT'YEV, A.P.; GRACHEVA, R.A.; VOLKOVA, L.M.

Synthesis of substituted acids with the use of furan derivatives.  
Part 3: Ethyl esters of  $\alpha$ -hydroxy acids. Zhur. ob. khim. 30  
no.9:2947-2949 S '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet.  
(Furaldehyde) (Acids, Organic)

ANDRIANOV, K.A.; VOIKOVA, L.M.

Methods of synthesis of 1,n-diethoxymethylchloromethylsiloxanes  
and reactions of substitution of chlorine in the  $\alpha$ -chloromethyl  
group. Zhur.ob.khim. 30 no.7:2393-2397 J1 '60.  
(MIRA 13:7)

1. Institut elementoorganicheskikh soedineniy Akademii nauk  
SSSR.

(Siloxanes)



ANDRIANOV, K.A.; VOLKOVA, L.M.

Reactions of bis(phenylaminomethyl)tetramethyldisiloxane with  
acids. Zhur.ob.khim. 30 no.7:2397-2400 J1 '60.  
(MIRA 13:7)

1. Institut elementoorganicheskikh soedineniy Akademii nauk  
SSSR.

(Siloxanes)

Excitation Cross Sections of Some Spectral  
Lines of Krypton and Xenon

S/048/60/024/008/004/017  
B012/B067

field; they are in good agreement within the error limit. Besides, also the absolute values of the excitation cross sections of 5 lines of krypton and 10 lines of xenon (which are given in the papers of Refs. 3,4) were measured according to the method described in Ref. 5. These values are tabulated here. There are 3 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im.  
M. V. Lomonosova (Department of Physics of the Moscow  
State University im. M. V. Lomonosov)

Card 2/2

5-3700C

S/079/60/030/007/016/020  
B001/B067 82299

AUTHORS: Andrianov, K. A., Volkova, L. M.

TITLE: Synthesis Methods of 1,n-Diethoxymethylchloromethylsiloxanes  
and Substitution Reactions of Chlorine in the  $\alpha$ -Chloromethyl Group

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7,  
pp. 2393 - 2397

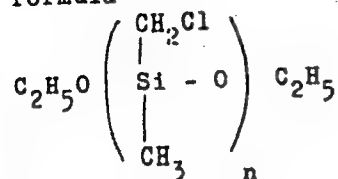
TEXT: In the present paper, some low-molecular 1,n-diethoxymethylchloro-<sup>X</sup>  
methylsiloxanes which, besides ethoxy, groups also contain chloromethyl  
groups in the end position, were synthesized, and the reaction of chlorine  
in the  $\alpha$ -chloromethyl group with aniline was studied. The above siloxanes  
were synthesized by two methods; 1) by hydrolyzing methylchloromethyl-  
diethoxysilane with a small amount of water in alcohol solution (Scheme 1),  
and 2) by direct action of 99% alcohol on methylchloromethyldichloro-  
silane (Scheme 2). 1,n-diethoxymethylchloromethylsiloxanes of the general

Card 1/3

Synthesis Methods of 1,n-Diethoxymethylchloromethylsiloxanes and Substitution Reactions of Chlorine in the  $\alpha$ -Chloromethyl Group

S/079/60/030/007/016/020  
B001/B067 82299

formula



were obtained as polymerization products (n=2,3,4) (Table). The compounds obtained were examined for their viscosity at various temperatures (Diagram). The determination of the activation energy of the viscous flow shows that it is considerably higher than the activation energy of the series

$(\text{CH}_3)_3\text{SiO}[\text{Si}(\text{CH}_3)_2\text{O}]_n\text{Si}(\text{CH}_3)_3$  at the same degree of polymerization (Ref.1).

This shows that the chloromethyl group and the ethoxy groups in the end position intensify intermolecular reaction. In reacting aniline with bis(chloromethylmethylethoxy)disiloxane, products are formed of different molecular weight from which phenylaminomethylmethyldiethoxysilane and 1,2,3-tri(phenylaminomethylmethyl)-1,3-diethoxytrisiloxane could be isolated. Simultaneously, chlorine was substituted by the phenylamino group. These compounds are formed only by a regrouping with simultaneous cleavage of the Si-O-Si group and by a rearrangement of the ethoxy groups

Card 2/3

Synthesis Methods of 1,n-Diethoxymethylchloro- S/079/60/030/007/016/020  
methylsiloxanes and Substitution Reactions of B001/B067 82299  
Chlorine in the  $\alpha$ -Chloromethyl Group

due to the action of aniline (Scheme 3). In the same way the highly viscous polymer phenylaminomethylmethyldiethoxysilane which cannot be distilled was formed by reacting 1,2,3-tri(chloromethylmethyl)-1,3-diethoxytrisiloxane with aniline (Scheme 4). There are 1 figure, 1 table, and 1 non-Soviet reference.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk  
SSSR (Institute of Elemental-organic Compounds of the  
Academy of Sciences USSR) X

SUBMITTED: July 1, 1959

Card 3/3

S/079/60/030/007/017/020  
B001/B067

AUTHORS: Andrianov, K. A., Volkova, L. M.

TITLE: Reactions of Bis(phenylaminomethyl)tetramethyldisiloxane  
With Acids

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7,  
pp. 2397 - 2400

TEXT: The reactions of organosilicon amines with acids have hitherto been little described (Ref. 1). The authors studied the reaction of bis(phenylaminomethyl)tetramethyldisiloxane with adipic-, phthalic-, succinic-, and fumaric acid. At 150°C under normal pressure and in the vacuum the condensation with adipic acid took place very slowly. This reaction was also made with the above acids at 250° and 300° in the nitrogen current. On heating the above siloxane with adipic acid at 250° a certain amount of water was separated and on further heating a product was condensed which did not mix with water. On distillation considerable amounts of this product were obtained. The reaction products are a mixture of hexamethylcyclotrisiloxane, octamethylcyclo-

Card 1/3

Reactions of Bis(phenylaminomethyl)tetramethyl- S/079/60/030/007/017/020  
disiloxane With Acids B001/B067

tetrasiloxane, and methylaniline. In this case, only small amounts of water are separated. The condensation product is a viscous liquid containing 3-5% silicon, or a low-melting resin without silicon (when the reaction lasts until the volatile products are distilled off). In condensing the above siloxane with the other acids, e.g. with terephthalic-, succinic-, and fumaric acid the process takes place in similar way. The experimental data obtained show that the reaction between the secondary amine of bis(phenylaminomethyl)tetramethyldisiloxane and the dibasic organic acids is very complicated and does not lead to organosilicon polyamides; in the further course of the reaction the S-C and Si-O-Si bonds are cleft (Scheme 1). At high temperatures, the water which is separated in this case reacts with the reaction products, or with bis(phenylaminomethyl)tetramethyldisiloxane which causes the cleavage of the S-C bond (Scheme 2). Besides octamethylcyclotetrasiloxane also hexamethylcyclotrisiloxane is formed whose formation is connected with the cleavage of the Si-O-Si bond. The mixtures of viscous and solid particles which cannot be distilled are difficult to separate and probably the reaction product of methylaniline with the acids. There is 1 non-Soviet reference. ✓

Card 2/3

Reactions of Bis(phenylaminomethyl)tetramethyl- S/079/60/030/007/017/020  
disiloxane With Acids B001/B067

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk  
SSSR (Institute of Elemental-organic Compounds of the  
Academy of Sciences USSR)

SUBMITTED: July 1, 1959

✓  
—

Card 3/3



VOLKOVA, L.M., DEVIATOV, A.M., KURALOVA, A.V.

Effective excitation cross sections of some spectral lines of  
krypton and xenon. Izv. AN SSSR. Ser. fiz. 24 no.8:950-952 Ag  
'60. (MIRA 13:8)

1. Fizicheskiy fakul'tet Moskovskogo gosudartsvennogo universi-  
teta imeni M.V. Lomonosova.  
(Krypton--Spectra) (Xenon--Spectra) (Nuclear reactions)

86391

S/190/60/002/008/015/017  
B004/B054

15-8114

2209

AUTHORS:

Andrianov, K. A., Volkova, L. M.

TITLE:

Interaction of Bis(chloro-methyl)-tetramethyl Siloxane With Hexamethylene Diamine

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, 1960. Vol. 2, No. 8, pp. 1261-1265

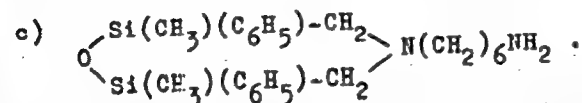
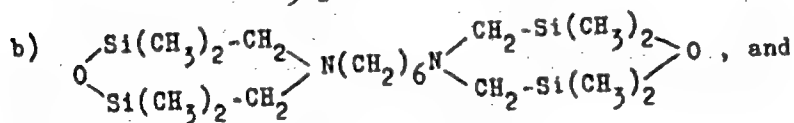
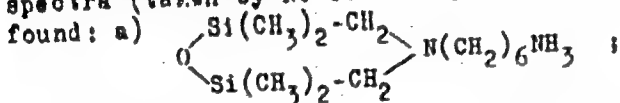
TEXT: The authors attempted to produce linear organosilicon compounds of the structure  $[-Si(CH_3)_2-CH_2-NH-(CH_2)_6-NH-CH_2-Si(CH_3)_2O]_x$ , making use of the high reactivity of the halogen of the methyl group bound to silicon with amines. In the present paper, they report on the reaction of bis(chloro-methyl)-tetramethyl siloxane with hexamethylene diamine. The reaction was performed by adding 0.315 moles of siloxane to 0.63 moles of molten hexamethylene diamine. It proceeded exothermically with a temperature increase up to 200°C. The low increase in viscosity, however, showed that the required linear polymers had not formed. At an equimolecular ratio of components, 60% distilled over at 170°C and 1 mm Hg, 25% could not be distilled. At a component ratio of 1:2, 80-90% distilled over at 250°C and 1 mm Hg.

Card 1/2

86301

Interaction of Bis(chloro-methyl)-tetramethyl Siloxane With Hexamethylene Diamine S/190/60/002/008/015/017  
B004/B054

Cyclic compounds were mainly formed. A substitution of methyl radicals by phenyl radicals did not prevent cyclization. The structure of the resulting substances was determined by analyses, the molecular weight, and infrared spectra (taken by N. O. Chumayevskiy). Three hitherto unknown compounds were found: a)



There are 2 figures, 1 table, and 7 references: 3 Soviet, 3 US, and 1 British.  
ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR  
(Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: April 11, 1960

Card 2/2

ANDRIANOV, K.A.; VOLKOVA, LORA M.

Synthesis of dimethycylosiloxanes containing functional groups  
at a silicon atom. Izv. AN SSSR Otd.khim.nauk no.2:264-  
269 F '62. (MIRA 15:2)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M.V.Lomonosova. (Cyclosiloxane)

L 42147-65 EPF(c)/EWP(j)/EWT(m)/T PC-4/Pr-4 RM

S/0020/65/160/006/1307/1310

ACCESSION NR: JP5007659

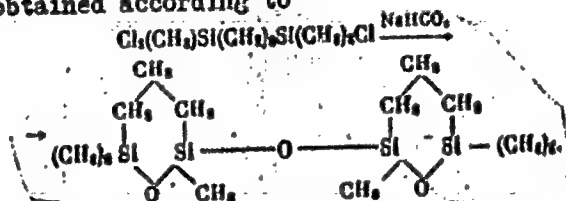
AUTHORS: Andrianov, K. A. (Academician); Delazari, N. V.; Volkova, L. V.; Chumayevskiy, N. A.

TITLE: Synthesis and spectra of trimethylalkyl-(phenyl, chlor)-1-oxa-2,6-disilacyclohexanes

SOURCE: AN SSSR. Doklady, v. 160, no. 6, 1965, 1307-1310

TOPIC TAGS: cyclohexane, IR absorption spectrum, spectrophotometer/ VIKS M 3 spectrophotometer, IKS 14 spectrophotometer

ABSTRACT: The authors have produced new trimethylalkyl-(phenyl, chlor)-1-oxa-2,6-disilacyclohexanes, with a yield of 60-80%, during hydrolysis of bis(alkylchlorosilyl)propanes by an aqueous solution of caustic potash. On heating an ether solution of 1-dimethylchlorosilyl-3-methyldichlorosilyl propane with bicarbonate of soda, a bicyclic compound was obtained according to

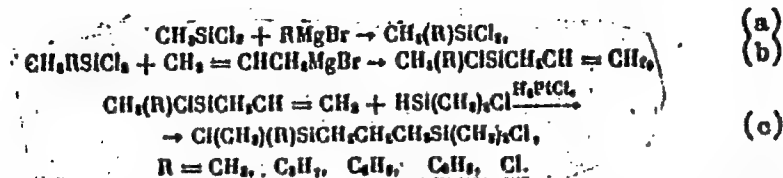


Card 1/5

L 42147-65

ACCESSION NR: AP5007659

Bis-(alkylchlorosilyl) propanes were obtained according to reactions (a), (b), and (c)



The properties of the newly synthesized substances are given in a table. The IR spectra were obtained and compared with other compounds. These spectra were studied on two spectrophotometers: a VIKS M-3 with an NaCl prism (700-1500  $\text{cm}^{-1}$ ) and an IKS-14 with a KBr prism (400-700  $\text{cm}^{-1}$ ). The spectra are illustrated in Fig. 1 on the Enclosure. Orig. art. has: 1 table and 1 figure.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy, Akademii nauk SSSR  
(Institute of Hetero-Organic Compounds, Academy of Sciences SSSR)

SUBMITTED: 26 Oct 64

ENCL: 01

SUB CODE: 00, OP

NO REF SOV: 001

OTHER: 007

Card 2/3

KORYAKIN, V.I., kand. tekhn. nauk; DOROGUTIN, B.S.; CHISTOV, I.F.;  
CHEREPAHOVA, I.V.; DAVYDOVA, M.I.; SOROKOLETOVA, R.I.;  
MIKHEYEVA, L.V.; ~~SEYANAGHI~~, V.G.; VOLKOVA, L.N.; SUMAROKOV, V.P.,  
kand. tekhn. nauk, red.; KUZNETSOV, G.A., red.; ZAYTSEVA, L.A.,  
tekhn. red.

[Technology of the production of wood chemicals; a manual for  
foremen, technicians, and engineers] Tekhnologiya proizvod-  
stva lesokhimicheskikh produktov; posobie dlia masterov i in-  
zhnerno-tekhnicheskikh rabotnikov. Moskva, Gos.izd-vo mest-  
noi promyshl. i khidozh. promyslov RSFSR, 1961. 383 p.

(MIRA 15:3)

(Wood--Chemistry)

VOIKOVA, L.M.; DOROGUTIN, B.S.; SHUL'GIN, V.A.; USTINOVICH, B.P., red.;  
KUZNETSOV, G.A., red.; EGGERT, A.P., tekhn.red.

[Tapping and turpentine pine] Podsochka i osmolopodsochka  
sosny. Pod obshchei red. B.P.Ustinovicha. Moskva, Vses.koop.  
izd-vo, 1959. 182 p. (MIRA 13:8)  
(Pine) (Turpentine)



I 55209-65 ENT(1)/EWA(h) Feb

ACCESSION NR: IP5015246

UR/0286/65/000/009/0033/0033

AUTHORS: Volkov, V. V.; Kostenko, M. A.; Volkova, L. N.

TITLE: A device for registering electrical pulses. Class 21, No. 170547

10  
B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 33

TOPIC TAGS: pulse storage, voltage amplifier

ABSTRACT: This Author Certificate presents a device for registering electrical pulses passing in a random order through several circuits. To simplify the circuit by providing a conversion for the number of pulses entering the input into a voltage the device contains one capacitor at each input. Each capacitor is connected through a diode to a common storage capacitor with a discharge circuit (see Fig. 1 on the Enclosure). The voltage from the capacitor is supplied to an amplifier input. The amplifier output is connected through a diode to the common lead of the input capacitors for their recharging. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 07Jun63

ENCL: 01

SUB CODE: RC

NO REF SOV: OOC

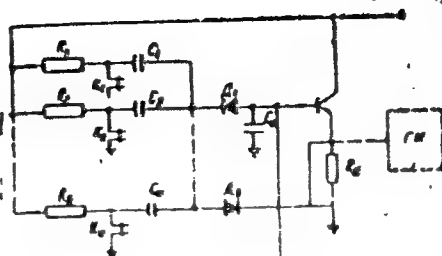
OTHER: OOC

Card 1/2

L 55209-65

ACCESSION NR: AP5015246

ENCLOSURE: 01



Discharge circuit

Card 2/2

VOLKOV A. I.

Fluorite in the Upper Permian deposits of Bashkir. A. I. Volkov. *Izvest. Akad. Nauk S.S.S.R., Ser. Geol.* 1954, No. 4, 112. Fluorite was found in Upper Permian colored deposits, in sandstones, siltstones, marls, and limestones. Its form is largely detrital, by the form of the surrounding seams, depressions, and fissures. Idiomorphic octahedral grains are seldom observed. The  $n$  is, on the av., 1.4337. Presence of fluorite in the colored sediments of Bashkir permits the assumption that in Upper Permian times, in all probability, there were briny lakes and they were isolated from each other. In these basins processes of sediment formation would favor the crystals of fluorite in the form of idiomorphic varieties. Gladys S. Macy

V.I.R. 2007  
SOCHEVANOV, V.G.; VOLKOVA, G.A.; ~~VOLKOVA, I.P.~~; MARTYNOVA, L.T.;  
PAKHOMOVA, K.S.; POPOVA, T.P.; ROZBIANSKAYA, A.A.;  
ROZOVSKAYA, G.V.; SHMAKOVA, N.V.; ANISIMKIN, I.F., redaktor  
izdatel'stva; POPOV, N.D., tekhnicheskiiy redaktor

[Methods of chemical analysis of mineral ores; polarography]  
Metody khimicheskogo analiza mineral'nogo syr'ia; poliarografiia.  
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane  
nedr. No. 2. 1956. 99 p. (MLRA 10:4)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut  
mineral'nogo syr'ya.  
(Polarography)

Vol KOVA, L.R.

1956, 1956, 22, 3, 283, 284. With an ammonium  
nitrate buffer acid giving a pH between 3 and 5 as  
an electrolyte. Pb and Sn give well-defined  
waves with  $E_p$  at -0.47 and -0.9 V  
respectively. The interference of Cu  
can be prevented by reducing it with ascorbic acid  
which also suppresses the wave of O<sub>2</sub>, and thus the  
use of an inert gas is unnecessary. To determine  
Pb in ores containing Sn, the sample (0.5 to 1 g)  
is boiled for 20 min. with 15 to 25 ml of dil. HCl  
(1:1) and the soln. is evaporated to a residue of  
most salts. Hydrochloric acid (1 to 3 drops) and  
10 ml of water are added, the soln. is heated to  
boil, and 10 ml of 1% ascorbic acid is added to reduce Cu.  
The soln. is then 35 to 50 ml. Cu, As and Sn are  
precipitated as ammonium phosphate with preparation of  
a solution of ammonium dihydrogen citrate  
in 500 to 600 ml of hot water, adding 120 to 130 ml  
of aq. NH<sub>3</sub> and diluting to 1 liter and the soln. is  
made up to 50 ml in a calibrated flask. After not  
more than 1 to 1.5 hr the wave at -0.38 to -0.65 V  
is measured.

Chem

119

East

VOLKOVA, L.P.; YUDELOVICH, M.Ya. (Moskva)

Losses caused by impact in stepped pipes at supersonic pressure rates. Izv. AN SSSR. Otd. tekhn. nauk no.4:67-72 Ap '58.

(Fluid dynamics)

(MIRA 11:6)

VOLKOVA, L. P.

VOLKOVA, L. P.--"Microorganisms Destroying the Humic Acid of Soil." Acad  
Sci USSR. Inst of Microbiology. Moscow, 1955. (Dissertation for  
the Degree of Candidate in Biological Science).

SO Knizhanay letopis'  
No 2 1956.

VOLKOVA, L.P., kand. biologicheskikh nauk; LUDANOVA, N.V., tekhnik-  
tekhnolog

Use of "nistatin" for mold control in meat. Trudy VNIIMP  
no.13:70-79 '62. (MIRA 17:5)



VOLKOVA, L.P.

VOLKOVA, L.P.

Modification of bone marrow and peripheral blood in acute  
suppurative infection. Vest.khir.74 no.8:41-45 D '54.  
(MLRA 8:10)

1. Iz kafedry gosptal'noy khirurgicheskoy kliniki (sav.  
prof. A.V. Smirnov) Leningradskogo sanitarno-gigiyeniche-  
skogo meditsinskogo instituta. Adres avtora: Leningrad 104  
ul. Chekhova, d.16, kv.5.

(BONE MARROW, in various diseases,  
suppurative infect.)

(BLOOD, in various diseases,  
suppurative infect.)

(INFECTIONS, pathology,  
blood & bone marrow in suppurative infect.)

VOLKOVA, L.P., assistant

Changes in bone marrow and in peripheral blood in angioneurosis  
obliterans treated by intra-arterial injections. Trudy LSGMI 33:  
130-134 '56. (MIRA 10:12)

1. Gosptal'naya khirurgicheskaya klinika Leningradskogo sanitarno-  
gigiyenicheskogo meditsinskogo instituta (zav. klinikoy - zasl.  
dayat. nauk, prof. A.V.Smirnov)

(THROMBOANGIITIS OBLITERANS, blood in  
peripheral blood & bone marrow changes in intra-arterial  
ther.)

(BONE MARROW, pathol.  
in thromboangiitis obliterans during intra-arterial  
ther.)

VOLKOVA, L.P., kandidat meditsinskikh nauk

Chordoma of the sacrococcygeal region. Khirurgiya 33 no.4:148-149  
Ap '57. (MLBA 10:7)

1. Iz gosital'noy khirurgicheskoy kliniki (dir. - sasluzhennyy  
deyatel' nauki prof. A.V.Smirnov) Leningradskogo sanitarno-gigiyeni-  
cheskogo meditsinskogo instituta (dir. D.A.Zhdanov)  
(SACROCCOCCYGEAL REGION, neoplasms  
diag. & surg. case report)

Harold, D.P., Assistant Administrator, U.S. Customs Service, New York City.

Letter of severe reprimand dated 10/10/78. (Enclosure 1)

1. Is hospitalized by National Hockey League (NHL) - 10/10/78.  
2. (Enclosure) Letter of severe reprimand dated 10/10/78.  
3. (Enclosure)

(ENCLOSURE AND INFORMATION, case reports,  
multiple dis. of track (RHS))

FUKS, I.M.; VALEYEVA, F.N.; POPKOVA, F.V.; VOLKOVA, L.P.; BELOGOLOVSKAYA, T.A.;  
ROMASHKEVICH, I.K.; Primalni uchastiye: MOROZOVA, L.M.; DASHEVSKAYA,  
S.I.; VAKHMINA, L.S.; KARAVAYEVA, G.V.; IVANOVSKIY, A.K.; ZHUKHINA,  
G.Ye.; SOLOV'YEVA, G.M.; ANDRIYANOVA, M.V.; AKHMETOVA, V.M.;  
NEMIROVSKAYA, M.Ye.; MUSORINA, L.S.; KALASHNIKOVA, Ye.I.; PESHKO,  
A.P.; IVANOVA, N.V.; ALKESEYEVA, N.I.; SADOVNIKOVA, G.N.

Study on the possibility of reducing the diphtheria vaccine dose in  
revaccination of 9 to 12 year-old schoolchildren. Zhur. mikrobiol.,  
epid. i immun. 41 no.11:103-107 '65. (MIRA 18:5)

1. Ufimskiy institut vaktsin i syvorotok imeni Mechnikova.

VOLKOVA, L.P.; BUTENKO, S.A.; KENIG, E.G.

Adaptation of representatives of *Pseudomonas* and *Mycobacterium*  
to some amino acid analogs. Prikl. biokhim. i mikrobiol. 1  
no. 4: 420-425 J1-Ag '65. (MIRA 16:11)

1. Institut mikrobiologii AN SSSR.

VOLKOVA, I.P., kand. med. nauk; DOBYCHINA, L.I.

Calcareous pancreatitis. Vest. khir. 94 no.1:21-25 Ja '65. (MIRA 18:7)

1. Iz 1-y kliniki obshchey khirurgii (zav. - prof. A.V.Smirnov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

KARASEVICH, Yu.N.; VOLKOVA, L.P.; KENIG, E.G.

Indicator culture for quantitative determination of incsite  
in natural media. Prikl. biokhim. i mikrobiol. 1 no.5:554-  
558 S-O '65. (MIRA 18:11)

1. Institut mikrobiologii AN SSSR.



KARASEVICH, Yu.N.; VOLKOVA, L.F.; BUTENKO, S.A.

Growth inhibition in certain microorganisms by threonine, Dokl. AN  
SSSR 163 no.5:1259-1261 Ag '65. (MIRA 18:8)

I. Institut mikrobiologii AN SSSR. Submitted November 4, 1964.

VOLEOVA, L.F., kand. med. nauk

Diagnosis and treatment of pancreatitis following surgery  
on the biliary tract, stomach and pancreas. Khirurgiya 39  
no.12:24-28 D '63 (MIRA 18:1)

L. Iz kafedry obshchey khirurgii (zav. - prof. A.V. Sainov)  
Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo insti-  
tuta.

SMIRNOV, A.V., prof.; VOLKOVA, L.P., kand. med. nauk

Surgical treatment of chronic painful recurrent pancreatitis.  
Khirurgiia 40 no.4:21-24 Ap '64 (MIRA 18:1)

1. Klinika obshchey khirurgii no.1 (zav. - prof. A.V. Smirnov)  
Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

VOLKOVA, L.P., kand. med. nauk (Leningrad, B-104, ul. Chekhova, 16, kv.5);  
ROBYCHINA, L.I.

Relationship between parapapillary diverticula of the duodenum  
and chronic pancreatitis. Vest. khir. 92 no.6:29-33 Je '64.

(MIRA 18:5)

1. Iz 1-y kafedry obshchey khirurgii (zav. - prof. A.V. Smirnov) i  
kafedry rentgenologii (zav. - prof. B.M. Shtern) Leningradskogo  
sanitarno-gigiyenicheskogo meditsinskogo instituta (rektor - prof.  
A.Ya. Ivanov).

VOLKOVA, L.P., kand. med. nauk

Changes in the function of the liver and the gallbladder following a gastric resection. Vest. khir. 93 no.9:17-21 S '64. (MIRA 18:4)

1. Iz 1-y kliniki obshchey khirurgii (zav. - prof. A.V.Smirnov)  
Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

VOLKOVA, L.P., kand. med. nauk; DOBYCHINA, L.I.

Preoperative clinical X-ray diagnosis of tumors of the biliary tract. Khirurgiia 41 no.4:90-95 Ap '65.

(MIRA 18:5)

1. Kafedra obshchey khirurgii (zav. - prof. A.V. Smirnov) i kafedra rentgenologii (zav. - prof. B.M. Shtern) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

VOLKOVA, L.P.

Functional and histochemical changes in the pancreas in diseases  
of the gallbladder and p. ncreas and following surgery on them.  
Trudy ISGMI 74:177-183 '62. (MIRA 17:10)

CHERNOMOVA, K.S.; VOLKOVA, I.P.; GORSHKOV, V.V.

Determination of microgram amounts of nickel in natural substances  
after its preliminary concentration. Zhur.anal.khim. 19 no.9:1085-  
1088 '64. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo  
syr'ya, Moskva.



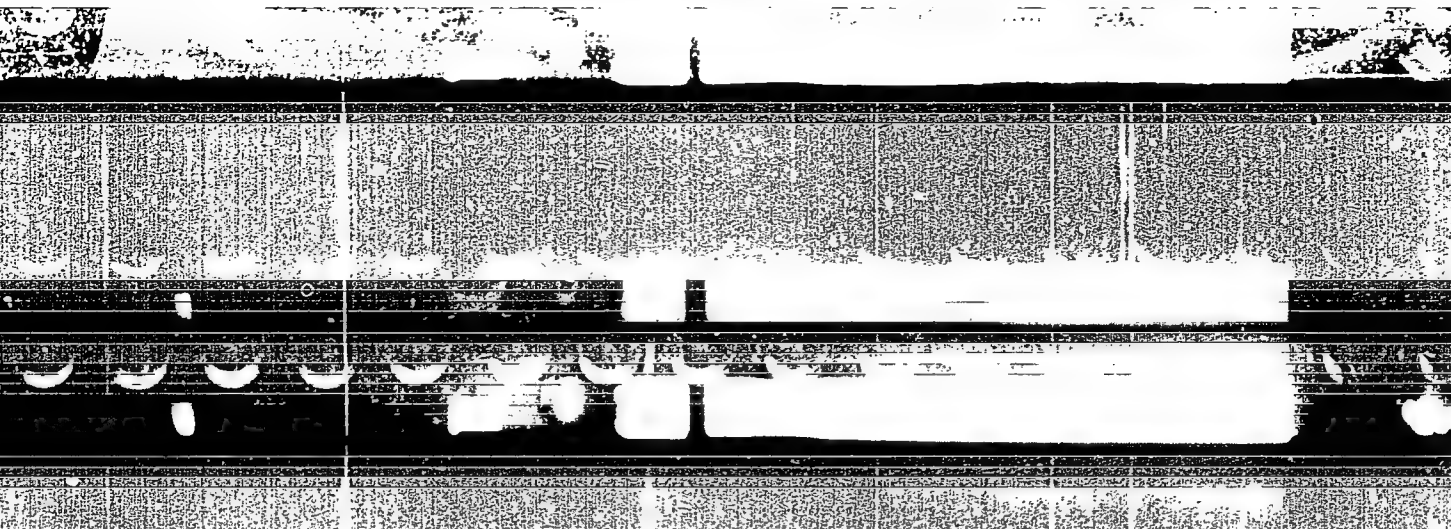
44-52 6 153.

APPROVED FOR RELEASE: 08/14/2013

**RDP86-00513R001860620001-7**

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R001860620001-7



APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R001860620001-7"

VOLKOVA, L.P.

Vitamin nutrition of yeasts of the genus *Torulopsis*. Mikro-  
biologiya 32 no.5:778-782 S-0'63 (MIRA 17:2)

1. Institut mikrobiologii AN SSSR.

DOLIDZE, G.V., kand.biolog.nauk; VOLKOVA, L.P., starshiy nauchnyy sotrudnik;  
NESTERENKO, N.I., kand.biolog.nauk; TKALICH, P.P.

From practices in the use of poisonous chemicals. Zashch. rast.  
ot vred. i bol. 8 no.9:20-21 S '63. (MIRA 16:10)

1. Institut sadovodstva, vinogradarstva i vinodeliya Gruzinskoy  
SSR (for Dolidze). 2. Pakovskaya sel'skokhozyaystvennaya opytnaya  
stantsiya (for Volkova). 3. Laboratoriya toksikologii Vsesoyuznogo  
nauchno-issledovatel'skogo instituta sakharnoy svekly, Kiyev (for  
Nesterenko).

VOLKOVA, M. S.

The bauxites and sterites of the Batbakharinsk and Eilishi districts of Karelia.  
M. S. Volkova. *Probl. n. Sov. Geol.* 1, 230-40 (1933).—Fairly extensive deposits of  
laterite with 54%  $Al_2O_3$  and of laterite with 64%  $Fe_2O_3$  were found. F. H. Rathmann

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

VOLKOVA, M.S.

Geology of the western spurs of the north-eastern and central part of the south-western branch of the Kara-Tau range Moskva, Ob"edinennoe nauchno-tekhn. izd-do, 1936. 54 p. (Trudy Kazakhskogo geologicheskogo tresta)  
(48-34797)

QE315.V57

I. Geology - Kazukhstan. 2. Paleontology-Kazakhstan.

VOLKOVA, M. S.

✓ The effect of ultraviolet and of Röntgen irradiation on solutions of proteins. M. S. Volkova and A. G. Pasynskii (A. N. Bakh Inst. Biochem., Acad. Sci. U.S.S.R., Moscow). *Biokhimiya* 20, 470-8 (1955).—Pure preps. of human serum albumin were obtained electrophoretically and dried at low temp.; horse serum globulin was obtained by fractional pptn. and dialysis. Amino N was detd. by the Van Slyke method and changes in soly. by the alc. coagulation method. Nonirradiated fractions were used as controls. For the detn. of the quantum yield, to 4 ml. of the protein soln., irradiated by ultraviolet rays, 1 ml. of alc. was added and the mixt. centrifuged. The sediment was washed twice with 1:4 alc. soln. and dried to const. wt., which represented the amt. of irradiated denatured protein. The addn. of 1 ml. alc. to 4 ml. of nonirradiated serum fractions failed to produce any turbidity. The intensity of irradiation was  $2.3 \times 10^6$  ergs/cm.<sup>2</sup>/sec. and on the entire surface of irradiation  $9.6 \times 10^6$  ergs/sec. The ratio between the quantity of denatured protein (assuming 1 ml. of 2% soln. of human serum albumin contains  $1.8 \times 10^{17}$  protein mols.) and the given no. of quanta during the irradiation period (assuming the av. energy quantum of  $8.8 \times 10^{-12}$  erg) represents the av. magnitude of the quantum yield,  $\phi$ , in the interval 250-335 m $\mu$ . For an aq. serum albumin soln.  $\phi = 7 \times 10^{-4}$ . CH.

and with phosphate buffer with a somewhat higher protein concn.  $\phi = 5.3 \times 10^{-4}$ . The total irradiation dose and not its intensity det. the extent of protein denaturation. With increase in the protein soln. concn. the increase in its viscosity under irradiation is lessened but specific viscosity =  $\eta_{sp}/c$  remains const. in broad intervals of concn., bearing a relation only to the denatured portion of the protein. Among the physicochem. changes are an increase in viscosity and turbidity, a lowering in the threshold of heat coagulability; amino acids by the Van Slyke procedure and optical rotation remain unchanged. At the isoelec. point denaturation appears more sharply depressed than at other pH values. Serum albumin is more easily irradiated by ultraviolet rays than is serum globulin. Denaturation of protein solns. by ultraviolet irradiation in the presence of detergents and urea showed an increase in the value of  $\eta$ , and in the presence of Na caprylate such values decreased; a decrease is found with phosphate buffer (M/15 and pH 7.0). The  $\eta_{sp}$  is greater in serum albumin than in serum globulin. In the case of Röntgen irradiation the effect of 50,000 r. could hardly be detected. Measurable effects were obtained with 75,000-10<sup>6</sup> r. Serum globulin was more resistant than serum albumin. Amino N and optical rota-

tion remained unchanged even after 200,000 r. At 10<sup>6</sup> r. 37% of the protein remains unaffected. Otherwise the effects of Röntgen-ray irradiation of serum protein fractions ran a parallel course of effects with that of ultraviolet irradiation. B. S. Levin.

VOLKOVA, M. S.

7 The effect of ultraviolet and Röntgen rays on lipoprotein and nucleoprotein solutions. M. S. Volkova and A. G. Pasynskii (A. N. Bakh Inst. Biokhimiya, Akad. Sci. U.S.S.R., Moscow). *Biokhimiya* 20, 665-74 (1955); *Cl. C.A.* 50, 2704c.—Irradiation with ultraviolet rays was done with a PRK2 lamp of 220 v., 8 amp. For irradiation, solns. were placed in Petri dishes 9.2 cm. in diam. to a depth of 3 mm. with an approx. vol. of 20 ml. Petri plates were covered with cellophane and the solns. kept cold with ice. The irradiation distance was 35 cm. from the axis of the lamp. Irradiation intensity with intervals of 250-235 mμ was  $2.3 \times 10^4$  erg/sq. cm./sec., and irradiation duration was 80 min. The irradiated soln. was placed into a Pletiglass cup and cooled by running H<sub>2</sub>O. Thickness of soln. was 1.7 cm. Part of the expts. was conducted with Röntgen therapeutic tubes (100 kv. and 5 ma.) with antiscatter and irradiation intensity 400-700 r./min. Irradiation of 14 cm. in a cellophane-covered tube. Details of procedures used in the studies with the lipo- and nucleoproteins are outlined. Irradiated were solns. of native lipoproteins from blood serum, nucleoproteins from the thyroid gland, and artificial mixts. of protein with Na oleate and ribonucleic acid; tests were made for changes in viscosity, spectroscopic absorption, electrophoretic properties, and others. The observed threshold of irradiation activity for lipoprotein (by the isotopic method) was detd. at  $10^4$  r.; for nucleoprotein (by the viscosity test) at 20-50 r., which is approx.  $1/10$  the value of previous observations. The stability of lipoproteins to irradiation is greater than that of pure proteins. The stability of nucleoproteins is higher than that of lipoproteins. In the case of artificial mixts. of proteins, fats, and nucleic acids the latter exert a stabilizing effect on the proteins under irradiation. In the irradiation of lipoproteins and nucleoproteins there is observed a 1-2% deg. of complex components. A considerable degree of depolymerization of nucleoproteins and a higher degree of polymerization of nucleic acids appears as a basic structural change of these substances under irradiation. The results obtained indicate that nucleoprotein is built up from block segments bound to one another by nucleic acid.

R. S. Levine



VOLKOVA, M.S.

USSR/Biology - Biochemistry

Card 1/1      rub. 22 - 32/51

Authors      • Pasynskiy, A. G.; Volkova, M. S.; and Blokhina, V. P.

Title      • Isotopic method of determining the denaturing changes in albumins

Periodical      • Dok. AN SSSR 101/2, 317-320, Mar 11, 1955

Abstract      • Experiments showed that the denaturing of albuminous substances results in an increase in the chemical reactivity of numerous functional groups of the denatured albumin. The introduction of a new isotopic ( $S^{35}$ ) method for the study and determination of changes in albumin due to denaturing is announced. Some results obtained with the new isotopic method are listed. Four references: 1 USSR, 1 USA, 1 German and 1 Belgian (1948-1953). Table.

Institution : Acad. of Sc. USSR, The A. N. Bakh Inst. of Biochemistry

Presented by: Academician A. I. Oparin, December 24, 1954

VOLKOVA M. S.

USER/Biology - Biochemistry

Card 1/1 Pub. 22 - 37/52

Authors : Pavlovskaya, T. Ye.; Volkova, M. S.; and Pasynskiy, A. G.

Title : Change in  $S^{35}$  methionine blood-serum bonds during denaturing by radiation and heating

Periodical : Dok. AN SSSR 101/4, 723-726, Apr 1, 1955

Abstract : It is shown, on the basis of experimental data, that the denaturing of serum albumina by radiation with ultraviolet or x-rays, and by heating is accompanied by an increased absorption of the marked methionine regardless of whether the serum is pure or under the effect of the microbe factor. The increased adsorbability during denaturing was found to be due to the liberation of new active groups which become saturated by each other. The nature of such active groups is described. Four USSR references (1948-1955). Graphs.

Institution : Acad. of Sc., USSR, The A. N. Bakh Inst. of Biochemistry

Presented by : Academician A. I. Oprain, January 14, 1955

VOLKOVA, M. S.

Volkova, M. S. - "The Effect of Radiation on Solutions of Proteins and Proteides." Acad Sci USSR. Inst of Biochemistry imeni A. N. Bakh. Moscow, 1956 (Dissertation for the Degree of Candidate in Biological Sciences):

So: Knizhnaya Letopis', No. 10, 1956, pp 116-127

VOLKOVA, M.S.

VOLKOVA, M.S.; TONGUR, A.M.; CHUNAYEVA, A.S.; PASYNSKIY, A.G.

Radiation determination of the molecular weight of insulin [with  
summary in English]. Biofizika 2 no.4:465-468 '57. (MLRA 10:9)

1. Institut biokhimi im. A.N.Bakha Akademii nauk SSSR, Moskva  
(INSULIN) (MOLECULAR WEIGHTS)  
(RADIATION—PHYSIOLOGICAL EFFECT)

VOLKOVA, M.S.

20-2-29/50

AUTHORS: Meduski, Jerzy, and Volkova, M. S.

TITLE: The Determination of the Molecular Weight of Phospholipase- C of Clostridium Perfringens Welchii by the Radiation Method (Radiatsionnoye opredeleniye molekulyarnogo vesa fosfolipazy - C Clostridium perfringens Welchii)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 2, pp. 266 - 269 (USSR)

ABSTRACT: In biochemistry the determination of the properties of the main exotoxin of the above-mentioned microorganism, which is one of the most widely spread pathogenic microbes of man and causes the gas-gangrene, is a task of topical interest in the study of this disease. This is photolipase-C which splits up into unsaturated and saturated lecithin as well as into lecithino-proteins under separation of phosphorylcholine, and which is highly sensitive to surface-activation. Therefore it was hitherto not possible to isolate this enzyme in a pure state. The modern methods of protein chemistry, however, make it possible to obtain some physico-chemical data also from non-purified dry preparation of the enzyme. Among those is the determination of the molecular weight by means of activation by radiation. The determination of the weight of this enzyme by means of radiation inactivation by  $\gamma$ -rays is the pur-

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The Determination of the Molecular Weight of Phospholipase - C of Clostridium  
Perfringens Welchii by the Radiation Method

pose of the present paper. It was proved that the molecular weight of the phospholipase C of the above-mentioned microbe amounts to 106000 ( $\pm 3000$ ) and that the particles of the enzyme apparently have a spherical shape. The dry preparation and its method of production are thoroughly described. The method of the quantitative series determination of the activity of phospholipase C is based on the modification according to Meduski & Uspenskaya. After radiation, the preparation which was treated and that which was not treated were examined for their activity in various solvents, among others in borate buffer (pH 8,6) and in water (pH 6,6). Table 1 gives the relation of the residual activity to the initial activity  $n/n_0$  in connection with gradually increasing doses of radiation. In graphical representations of the dependence of the residual activity on the dose of radiation a straight line is obtained in semilogarithmic coordinates (figure 1). For a calculation of the sensitive unit of weight of phospholipase C the following formula may be used:

$$\frac{n}{n_0} = e^{-vI} \quad (I), \text{ where } v \text{ is the volume of}$$

the unit sensitive to ionization, I - the number of primary ionizations per 1 ml of the dry enzyme. The value "v" was calculated in

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The Determination of the Molecular Weight of Phospholipase - C of Clostridium  
Perfringens Welchii by the Radiation Method

two ways. The first way is based on the graphic determination of the dose at which only 37 % of the biological activity remains in the preparation investigated; as  $e^{-1} = 0,37$ ,  $vI$  in this connection = 1 and  $v = 1/I$ . From the diagram (figure 1) it was found that the dose causing 63 % inactivation amounts to  $4,6 \cdot 10^6$  r. The second way is based on the same equation, but " $v$ " is calculated from the logarithmic form of the equation:

$$\ln \frac{n}{n_0} = -vI. \text{ After calculating the molecular weight, the authors introduced it together with the diffusion constant into Svedenborg's equation and from this calculated the probable constant of sedimentation of phospholipase C, i.e. } S = 7,9 \cdot 10^{-13}.$$

There are 1 figure, 1 table and 15 references, 2 of which are Slavic.

ASSOCIATION: Institute for Biochemistry AN USSR imeni A. N. Bakh and State Institute for Hygiene as well as Committee for Biochemistry of the Polish Academy of Science (Institut biokhimii im. A. N. Bakha Akademii nauk SSSR, Gosudarstvennyy Institut gigiyeny i Biokhimicheskiiy komitet Pol'skoy Akademii nauk).

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20-2-29/50

The Determination of the Molecular Weight of Phospholipase - C of Clostridium  
Perfringens Welchii by the Radiation Method

PRESENTED: June, 3, 1957, by A. I. Oparin, Academician

SUBMITTED: June 3, 1957

AVAILABLE: Library of Congress

Card 4/4



VOLKOVA, M. S.

with A. G. Pasynskiy "Radiation method for molecular weight determination of protein"

report presented at the 10th All-Union Conf. on Highly Molecular Compounds, Biologically Active Polymer Compounds, Moscow, 11-13 June 1958. (Vest.Ak Nauk SSSR, 1958, No. 9, pp. 111-113)

VOLKOVA, M.S.; KOMAROVA, L.V.; PASYNSKIY, A.G.

Binding of labeled methionine-S<sup>35</sup> by proteins. Biokhimiia 25  
no. 3:422-426 My-Je '60. (MIRA 14:4)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R.,  
Moscow, and Medical Institute, Yaroslavl.  
(METHIONINE) (PROTEIN METABOLISM)

ACCESSION NR: AP4015081

S/0205/64/004/001/0029/0035

AUTHOR: Pasyanskiy, A. G.; Volkova, M. S.; Komarova, L. V.

TITLE: Effect of radiation damaged nucleoprotein and lipoprotein separating membrane surfaces on enzyme reaction rates

SOURCE: Radiobiologiya, v. 4, no. 1, 1964, 29-35

TOPIC TAGS: radiation damage, nucleoprotein membrane surface, lipoprotein membrane surface, enzyme reaction rate, substrate oxidation rate, dehydrogenation reaction, radiosensitivity, membrane surface permeability, lipid component, RNA

ABSTRACT: Nucleoprotein and lipoprotein membrane surfaces separating the enzyme from the substrate were studied in a series of experiments. Nucleoprotein membrane surfaces were investigated in irradiated crystalline peroxidase suspensions in which the particles were separated from the ascorbic acid substrate by a thin ribonucleoprotein film (radiation doses not given). Lipoprotein membrane surfaces were investigated in irradiated (20-70 kr doses) artificial lipoprotein complexes and in isolated rat liver mitochondrion suspensions. Enzyme reactions were determined in the peroxidase suspensions and in the

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ACCESSION NR: AP4015081

artificial lipoprotein complexes by substrate oxidation rates. In the mitochondrion suspensions a polarographic method was used to determine the dehydrogenation reaction of succinic acid to fumaric acid catalyzed by succinodehydrogenase, a mitochondrion enzyme. Findings show that nucleoprotein membrane surfaces are highly radiosensitive and their enzyme reactions are accelerated by 30-40% as a result of increased permeability of the radiation damaged surfaces. But, lipoprotein membrane surfaces display high radioresistance to doses up to 50 kr and enzyme reactions do not change. Radioresistance of the lipoprotein membrane surface is attributed to its lipoid component which has the capacity to spread out and protect the membrane from increased permeability and other structural damage. Nucleoprotein membrane surface permeability is affected by as few as 1 to 2 ionizations taking place in a membrane surface layer containing over 1,000 RNA molecules. Thus, nucleoprotein membrane surfaces play an important role in the development of biochemical damage in the cell. Orig. art. has: 4 figures.

ASSOCIATION: None

Card 2/3

ACCESSION NR: AP4015081

SUBMITTED: 31Jul63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: L3

NO REF SOV: 009

OTHER: 006

Card 3/3

PASYNSKIY, A.G.; VOLKOVA, M.S.; KOMAROVA, L.V.

Effect of radiation damage to the nucleoprotein and lipoprotein  
interfaces on the enzyme reaction rate. Radiobiologia 4  
no.1:29-35 '64. (MIRA 17:4)

VOLKOVA, M. S.

Radiation Chemistry in Two-Phase Systems  
Tuesday Afternoon Session B-6-2 (Contd.)

(e)  
The Role of Radiation-Induced Damage in Interphases in the Biological Action of Radiation

A. G. Pasyntki, M. S. Volkova, A. M. Tongur and  
I. M. Komarova

The measurements of dry and moist samples of DNA in an electron microscope show that irradiation not only destroys DNA molecules but also causes them to coil up. The appearance of chemical cross-links in monolayers of DNA disturbs the structure and increases the area of the monolayer. A result of such a radiation-induced disturbance of the organization of the structure of thin surface layers (including nucleic acids) is a conspicuous change of their permeability. A considerable increase of enzymatic reaction rates after irradiation could be shown on a model system in which the enzyme peroxidase and the substrate ascorbic acid were separated by a layer of RNA about 160 Å thick. Similar phenomena are being investigated in systems with lipoprotein interphases. Radiation damage to the structural organization of membranes plays an important role in the disturbance of the oxidation rate of succinic acid by isolated liver mitochondria, and in leaf tissues of various plants (tea, bean, etc.) in which disruption of enzymatic oxidative processes occurs. The changes in intracellular molecular surfaces can be the source of all subsequent biochemical disturbances and of radiation disease in living cells.

*Institute of Biological Chemistry, Academy of Sciences, Moscow, USSR*

report presented at the 2nd Intl. Congress of Radiation Research,  
Harrogate/Yorkshire, Gt. Brit. 5-11 Aug 1962

SHKOL'NIKOV, S. V.; VOLKOVA, M. T.

Organization of the dispatching service at the Rostov First Aid  
Station. Zdrav. Ros. Feder. 6 no.6:20-23 Jo '62.  
(NIRA 15:7)

1. Iz stantsii skoroy meditsinskoy pomoshchi Rostova-na-Donu  
(glavnyy vrach V. A. Derkach).

(ROSTOV—FIRST AID IN ILLNESS AND INJURY)



MODYAYEV, V.P., mladshiy nauchnyy sotrudnik; VOLKOVA, M.V., mladshiy nauchnyy sotrudnik

Experimental study of heterogenous elastic collagen casings in osteoplasty. Ortop., travm. i protez. 26 no.3:56-59 Mr '65.  
(MIRA 18:7)

1. Iz Novosibirskogo instituta travmatologii i ortopedii (dir. - dotsent D.P. Metelkin) i laboratorii gistokhimii (zav. - prof. B.B.Fuks) Sibirskogo otdeleniya AN SSSR. Adres avtorov: Novosibirsk 70, ul. Frunze, d.33, Institut travmatologii i ortopedii.

VOLKOVA, M.V.

The PBN-75 mounted bog plow. Biul.tekh.-ekon.inform. no.1:  
60-61 '62. (MIRA 15:2)

(Plows)

MAKHONINA, G.I.; YUSHKOV, P.I.; VOLKOVA, M.Ya.; TIMOFEYEV-RESOVSKIY, N.V.

Distribution of  $Sr^{90}$  and  $Ru^{106}$  in the basic organs of pine. Dokl.  
AN SSSR 151 no.6:1456-1457 Ag '63. (MIRA 16:10)

1. Institut biologii Ural'skogo filiala AN SSSR. Predstavleno  
akademikom V.N.Sukachevym.

VOLKOVA, M.Ya.; MAKHONINA, G.I.; TITLYANOVA, A.A.

Effect of natural extracts on the adsorption of some radioisotopes  
by soil. Pochvovedenie no.3:52-57 Mr '64. (MIRA 17:4)

1. Institut biologii Ural'skogo filiala AN SSSR.

VOIKOVA, M.Ye. (Moskva); TSVETKOV, Yu.V. (Moskva); CHIZHIKOV, D.M.  
(Moskva)

Thermodynamics and kinetics of the carbothermic reduction of  
tin oxide from molten silicates. Izv. AN SSSR. Met. 1 gor.  
delo no.4:63-67 J1-kg '64. (MIRA 17:9)

VOLKOVA, M.Ye.; TSVETKOV, Yu.V.

Use of overlapping integrals for the evaluation of the  
degree of ionicity and stability of the chemical bond  
in metal oxides. Zhur. neorg. khim. 9 no.5:1246-1249  
My '64. (MIRA 17:9)

PIK, I.Sh.; VOLKOVA, M.Ye.

Molding powder K-18-56 for thread parts of high water resistance.  
Plast.massy no.2:71 '61. (MIRA 14:2)  
(Karacharovo—Plastics—Molding)

CHIZHIKOV, D.M.; VOLKOVA, M.Ya.; TSVEIKOV, Yu.V.

Determination of tin monoxide activity in melts of the  $\text{SnO-SiO}_2$  systems using the electromotive force method. Dokl. AN SSSR 150 no.2:353-355 My '63. (MIRA 16:5)

1. Institut metallurgii im. A.A.Baykova. 2. Chlen-korrespondent AN SSSR (for Chizhikov).  
(Tin oxides) (Electromotive force)



CHIZHIKOV, D.M. (Moskva); VOLKOVA, M. Ye. (Moskva), TSVETKOV, Yu.V.  
(Moskva)

Certain physicochemical properties of melts in the system  
tin monoxide - silica. Izv. AN SSSR Met. i gor. delo no.3:  
82-90 My-Je'64 (MIRA 17:7)

VOLKOVA, N.

Results of the afforestation of Erichibor Mountain by the forestry service of Pila Monastery. p. 222.

Vol. 11, no. 5, May 1955  
GORSKO STOPANSTVO  
Sofiya, Bulgaria

SO: Eastern European Accession Vol. 5 No. 4 April 1956

FRYDINA, Z.; PROLOV, A.; YELISAVETSKIY, M.; VOLKOVA, N.

Precast diaphragms for span structures. Avt.dor. 23 no.7:  
32-3 of cover J1 '60. (MIRA 13:7)

(Viaducts)

(Precast concrete construction)

DUDEROV, G.N.; VOLKOVA, N.; BUYNOVA, L.

Conversion to the one-five method in the production of tube  
condensers. Trudy MKHTI no. 24:199-208 '57. (MIRA 11:6)  
(Ceramic industries)